USDA United States Department of Agriculture

Natural Resources Conservation Service

Ogallala Aquifer Initiative

Conservation Beyond Boundaries

OAI

Overview

The Ogallala Aquifer lies beneath about 225,000 square miles in eight states in the central United States. Nearly 15.1 million irrigated acres of agricultural land are located in this vast region, representing 30 percent of all groundwater used for irrigation in the United States.

Water quantity is the primary concern in the Ogallala Aquifer region because the current use of groundwater exceeds the amount of recharge through natural processes. This has led to substantial decreases in water levels in many areas of the aquifer. Water quality is also a concern where water recharge carries contaminants, including nutrients and pesticides.

Agricultural producers feel the adverse impacts of reduced water in the aquifer as water is the lifeblood of agriculture in this region. USDA's Natural Resources Conservation Service (NRCS) established the Ogallala Aquifer Initiative (OAI) in Fiscal Year 2011 to increase water efficiency, promote recharge and increase river flow to benefit wildlife. Agricultural producers receive technical and financial assistance to implement water conservation practices in areas where the aquifer level has declined significantly and where the groundwater is susceptible to nutrients and pesticide contamination.

Priorities

The priorities of the OAI are to reduce the quantity of water removed from the aquifer, improve water quality and ensure the economic viability of working lands by:

- Conserving water by improving irrigation efficiency
- Improving water quality by applying nutrient management and conservation cropping systems
- Promoting groundwater recharge
- Converting marginal irrigated land to dryland farming
- Increasing river flow to benefit wildlife

Funding Source

Environmental Quality Incentives Program (EQIP)

Results

In fiscal year 2014, NRCS invested nearly $19 million to fund 310 contracts covering more than 47,000 acres. Since this program began in fiscal year 2011, NRCS has invested more than $66 million in financial assistance to more than 1,540 producers to help them implement groundwater conservation on approximately 325,000 acres of agricultural lands.

Agricultural producers participating in OAI have increased water efficiency in the most vulnerable areas of the aquifer. In 2013, NRCS prepared an analysis of reduced water withdrawals resulting from the agency's work with farmers in the region. NRCS found that conservation work during the past four years reduced water withdrawals from the Ogallala Aquifer by at least 1.5 million acre-feet or more than 489 billion gallons. These practices also reduced irrigation energy needs equivalent to almost 33 million gallons of diesel fuel.

Greg Chavez worked with NRCS to make improvements to his farm to use water wisely.

Feature Story

NRCS Helps Wyoming Producers Conserve Water, Adopt Dryland Farming Practices

NRCS District Conservationist James Pike works on an important and thorny issue in Laramie County, Wyoming – conserving water. Encouraging wise water use is part of Pike's passion when he's working with farmers and ranchers in a region that is fed by the Ogallala Aquifer.

Water from the Aquifer is vital to agriculture, cities and industry, making up 30 percent of all groundwater used for irrigation in America. NRCS' OAI aims to reduce aquifer water use, improve water quality, increase water quantity and enhance the economic viability of croplands and rangelands in the region.

Pike works with farmers and ranchers to conserve water by using it more efficiently. In some cases, farmers and ranchers received NRCS assistance to not use water from the Aquifer for crops – only rainwater. This practice is called dryland farming.

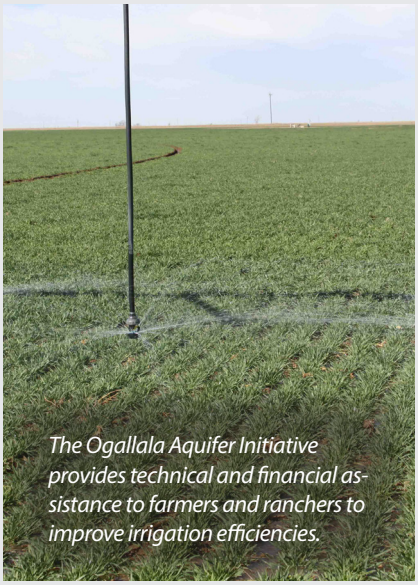
Too many wells combined with inefficient irrigation systems have made water conservation a volatile topic in Wyoming. But despite its prickly nature, Pike and the farmers and ranchers with whom he works, more than 1 billion gallons of water are conserved each year.

Pike worked with Mike Poelma to grow wheat on 125 acres, watered only by rain. By not using water from the Aquifer, Poelma hopes his three wells will eventually recharge with water. But he knows it's not an easy fix and will take some time.

Poelma received assistance from conservation programs offered by NRCS, which provided financial assistance for water conservation practices to improve water use efficiencies and water quality and to save energy.

While water savings is the ultimate goal for Poelma, Pike also worked with him to set up conservation planning measures to increase soil health.

Poelma established reduced tillage practices and residue management. The conservation practices addressed soil erosion and water quantity as resource concerns. These practices are valuable to improve soil moisture and they help in building organic matter to improve the overall health of the soil.



The Ogallala Aquifer Initiative provides technical and financial assistance to farmers and ranchers to improve irrigation efficiencies.

Fiscal Year 2014 Ogallala Aquifer Initiative
NRCS Financial Assistance (FA) and active and completed contracts

State	Contracts	Obligations	Acres
Colorado	2	$189,209	474
Kansas	23	$2,481,647	4,613
Nebraska	136	$8,411,716	14,027
New Mexico	2	$318,750	270
Oklahoma	7	$1,063,195	1,754
Texas	129	$6,337,041	23,386
Wyoming	11	$341,546	2,084
TOTAL	310	$19,143,104	46,607

Data source: NRCS Resource Economics, Analysis and Policy Division, January 2015.

For more information, visit: nrcs.usda.gov/initiatives

Helping People Help the Land